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Via ECFS

Ms. Marlene Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, DC 20554

Re: Written Ex Parte Presentation in WT Docket No. 03-103

Dear Ms. Dortch:

On behalf of QUALCOMM Incorporated ("QUALCOMM"), I am submitting this filing to provide the Commission staff with technical information regarding two issues in this proceeding.

First, QUALCOMM is aware of the various proposals whereby two licensees would provide broadband service in the 800 MHz air-to-ground ("ATG") band with overlapping systems, each using 2 MHz of spectrum. We believe that with two overlapping services operating in the same spectrum, service is possible. While the capacity achieved by each operator will be measurably less with an overlap operation, the sum of the capacities achieved could be greater than what would be obtained by one carrier having sole use of the entire spectrum. (Here, capacity is used in the sense of throughput, taking into account the probability that messages are mutilated and have to be retransmitted.)

However, the increased total capacity comes at a significant cost in terms of the customer experience. With sharing in place, there will be periods of time when the data rate on the plane slows to a trickle, and there will be yet other periods when no communications is possible to or from the plane. These periods within which service will be impaired or not available at all will be long enough, when they occur, for customers to notice. The periods need to be long enough for the relative geometries of planes to base stations to change significantly. These noticeable outages, which are more likely to occur at relatively lower altitudes and where flight routes result in heavy concentration of aircraft, are likely to contribute to a customer's perception of the air-to-ground service as being sub-standard in quality.

Second, QUALCOMM is aware of proposals by which the Commission would allow one licensee to hold a license for 3 MHz in the ATG band for provision of broadband service. ATG base stations operating in the 849-851 MHz band have the potential to create harmful interference to cellular base stations. To prevent such interference from occurring, ATG base stations should be engineered such as to limit the interference into the cellular base stations receiver below -117 dBm/1.25MHz. For base stations with noise figure of 4 dB and assuming

ambient temperature of 290 degrees Kelvin, i.e. noise floor of -109 dBm/1.25MHz, an additional interference level of -117 dBm/1.25MHz results in a noise figure degradation of about 0.6 dB. Wherever the proposed interference limits are not met, remedies include careful choice, placement and pointing of the base station antennas, choosing higher ATG base stations towers where possible to reduce coupling between the ATG and cellular base stations antennas, and use of transmit filters.

There will be situations where to meet interference levels as low as -117 dBm into the receiver of a cellular base station, the ATG base station transmitter requires a transmit filter with attenuation of as much as 60 dB at the band edge. Such filters will be impractical if the CDMA carrier is placed next to the cellular band edge with only 125 kHz of guard band. To achieve such filtering, the CDMA carrier should be placed in the middle of the 2 MHz ATG base station transmit band to allow 375 kHz of guard band.

I am filing this letter via ECFS.

Respectfully submitted,

/s/ Dean R. Brenner

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